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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,871	03/24/2004	David E. Simmen	STL919990184US3	5489

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EXAMINER

NGUYEN, CINDY

ART UNIT PAPER NUMBER

2161

DATE MAILED: 12/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/807,871

Applicant(s)

SIMMEN, DAVID E.

Examiner

Cindy Nguyen

Art Unit

2161

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/10/06.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is in response to communication filed 10/10/06.

Response to Arguments

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Double Patenting

Claims 1-33 stand provisionally rejected on the ground of nonstatutory double patenting over claims 1, 3-30 of copending Application No. 09/669556. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows: using statistics on one or more expressions of one or more pre-defined queries to determine an optimal query execution plan for the query, generating cardinality estimates for one or more query execution plans for the query using statistics of one or more automatic summary tables that vertically overlap the query and using the generated cardinality estimates to determine an optimal query execution plan for the query.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other

Art Unit: 2161

copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2-5, 12-17, 23-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Zaharioudakis et al. (US 20030088558) (hereafter Zaharioudakis).

Regarding claims 1, 12 and 23, Zaharioudakis discloses: a method, an apparatus, an article of manufacture for optimizing execution of a query that accesses data stored on a data store connected to a computer comprising:

using statistics on one or more expressions of one or more pre-defined queries to determine an optimal query execution plan for the query (0041-0043, Zaharioudakis);

executing the optimal query execution plan for the query in order to access the data stored on the data store connected to a computer and then output the accessed data. (paragraphs 0041, 0043, Zaharioudakis).

Regarding claims 2, 13 and 24, all the limitations of these claims have been noted in the rejection of claims 1, 12 and 23 above, respectively. In addition, Zaharioudakis discloses: wherein each of the pre-defined queries is associated with an automatic summary table, materialized view or a view (0043, Zaharioudakis).

Regarding claims 3, 14 and 25, all the limitations of these claims have been noted in the rejection of claims 1, 12 and 23 above, respectively. In addition, Zaharioudakis disclose: further comprising: generating cardinality estimates for one or more query execution plans for the query using the statistics of one or more of the pre-defined queries that vertically overlap the query (0043, Zaharioudakis); and using the generated cardinality estimates to determine an optimal query execution plan for the query 0043, Zaharioudakis).

Regarding claims 4, 15 and 26, all the limitations of these claims have been noted in the rejection of claims 3, 14 and 25 above, respectively. In addition, Zaharioudakis discloses: wherein the statistics are used to improve a combined selectivity estimate of one or more predicates of the query (0041, Zaharioudakis).

Regarding claims 5, 16 and 27, all the limitations of these claims have been noted in the rejection of claims 4, 15 and 26 above, respectively. In addition, Zaharioudakis discloses: wherein the predicates are applied by one or more of the pre-defined queries (0048, Zaharioudakis).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-11, 17-22, and 28-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zaharioudakis et al. (US 20030088558) (Zaharioudakis) in view of Bello et al. (US 6496819) (Bello).

Regarding claims 6, 17 and 28, all the limitations of these claims have been noted in the rejection of claims 5, 16 and 27 above, respectively. However, Zaharioudakis didn't disclose: wherein the selectivity estimate comprises a ratio of a cardinality of the pre-defined query to a product of cardinalities of base tables referenced in the pre- defined query and the query. On the other hand, Bello discloses: wherein the selectivity estimate comprises a ratio of a cardinality of the pre-defined query to a product of cardinalities of base tables referenced in the pre- defined query and the query (col. 10, lines 45-67, Bello). Thus, at the time invention was made, it would have been obvious to a person of ordinary skill in the art to include the selectivity estimate comprises a ratio of a cardinality of the pre-defined query to a product of cardinalities of base tables referenced in the pre- defined query and the query in the system of Zaharioudakis as taught by Bello. The motivation being to enable the query reduction factor to estimates how useful it will be to access the materialized view to process the received query (col. 10, lines 42-45, Bello).

Regarding claims 7, 18 and 29, all the limitations of these claims have been noted in the rejection of claims 4, 15 and 26 above, respectively. However, Zaharioudakis didn't disclose: wherein zero or more predicates of the query are applied by one of the pre-defined queries and wherein the remaining predicates are eligible to be applied on the pre-defined query. On the other hand, wherein zero or more predicates of the query are applied by one of the pre-defined queries and wherein the remaining predicates are eligible to be applied on the pre-defined query (col. 10, lines 20-45, Bello). Thus, at the time invention was made, it would have been obvious to a person of ordinary skill in the art to include wherein zero or more predicates of the query are applied by one of the pre-defined queries and wherein the remaining predicates are eligible to be applied on the pre-defined query in the system of Zaharioudakis as taught by Bello. The motivation being to enable the system determines whether the materialized view is actually eligible to be used in rewrite of the received query to reduce the execution cost of the query.

Regarding claims 8, 19 and 30, all the limitations of these claims have been noted in the rejection of claims 7, 18 and 29 above, respectively. In addition, Zaharioudakis/Bello discloses: wherein a predicate is eligible to be applied on the pre-defined query if it can be evaluated using the output columns and expressions of the pre-defined query (col. 11, lines 30-55, Bello).

Regarding claims 9, 20 and 31, all the limitations of these claims have been noted in the rejection of claims 8, 19 and 30 above, respectively. In addition, Zaharioudakis/Bello discloses: further comprising determining a subpredicate combined selectivity estimate of the unapplied eligible predicates using column distribution statistics of the pre-defined query (col. 10, lines 30-36, Bello).

Regarding claims 10, 21 and 32, all the limitations of these claims have been noted in the rejection of claims 9, 20 and 31 above, respectively. In addition, Zaharioudakis/Bello discloses: wherein a cardinality ratio comprises a ratio of a cardinality of the pre-defined query to a product of cardinalities of base tables referenced in the pre-defined query and the query (col. 10, lines 37-56, Bello).

Regarding claims 11, 22 and 33, all the limitations of these claims have been noted in the rejection of claims 10, 21 and 32 above, respectively. In addition, Zaharioudakis/Bello discloses: wherein the selectivity estimate comprises a product of the subpredicate combined selectivity estimate and the cardinality ratio (col. 11, lines 55 to col. 12, lines 41, Bello).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

Art Unit: 2161

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cindy Nguyen whose telephone number is 571-272-4025. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gaffin Jeffrey can be reached on 571-272-4146. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

CN

Cindy Nguyen
November 26, 2006


JEFFREY GAFFIN
SUPERVISOR, PATENT EXAMINER
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